

NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: August 1, 1976

Forwarded to:

Bay Area Rapid Transit District
Massachusetts Bay Transportation Authority
New York City Transit Authority
Port Authority Transit Corporation
Port Authority Trans-Hudson Corporation
Washington Metropolitan Area Transit
Authority
Southeastern Pennsylvania Transportation
Authority
Greater Cleveland Regional Transit Authority

SAFETY RECOMMENDATION(S)

R-76-42 through R-76-44

On January 9, 1976, at 8:06 a.m., Chicago Transit Authority (CTA) train No. 315 struck the rear end of train No. 104 while it was standing at the Addison Street Station platform in Chicago, Illinois. The impact forces extensively damaged the lead car of the moving train and the rear car of the standing train, and slightly damaged the other cars in each train. Damage to the equipment and track was estimated to be \$267,000. Of the 381 passengers who were injured in the collision, 1 passenger died. 1/

Through years of operational experience, the railroad and rapid transit industries have recognized the need for a safety backup system for the train operators. Advancing technology has produced backup equipment that is safe, reliable, and efficient.

The Chicago Transit Authority has installed automatic train control (ATC) and cab signals over portions of its system. This system provides a high degree of safety when it is used and maintained properly. Problems arise when the ATC becomes inoperative. A bypass provision was incorporated into the system so the train could be moved when the ATC failed. This is necessary

1/ For more information on this report, read "Railroad Accident Report--Chicago Transit Authority, Collision of Trains No. 104 and No. 315 at Addison Street Station, Chicago, Illinois January 9, 1976. "NTSB-RAR-76-9.

because the nature of some failures would prevent the trains from moving. However, the bypass feature has been used to move trains which carry passengers. When this is done, all the safety afforded by the ATC is lost and safe operation becomes totally dependent on the motorman.

During the investigation of the CTA accident, the Safety Board found that during 1975, ATC systems failed an average of 6.5 times a day and caused the trains to be operated in the bypass mode. This failure rate probably could be decreased (1) if trains were inspected more frequently to detect minor failures or impending failures, and (2) if predeparture tests were initiated to check the ATC, the cab signals and the train phone equipment.

The day after the accident, the CTA issued instructions that trains would no longer be permitted to leave a terminal with the ATC inoperative and that if the ATC failed en route, passengers were to be unloaded at the next station so that the equipment could be taken out of service immediately for repairs. This procedure would prolong the time that the train would be in the station and would set up the conditions which allowed this accident to occur. These procedures should be carefully studied to insure that they are the best way to resolve ATC failures.

The investigation also revealed that the communication system was not reliable because it failed several times the morning of the accident. Reliable communication facilities are essential to insure dependable controls for operational moves and to warn other trains when a hazardous condition or a problem exists. A study of this system is warranted.

Therefore, the National Transportation Safety Board recommends that the Bay Area Rapid Transit District, the Massachusetts Bay Transportation Authority, the New York City Transit Authority, the Port Authority Transit Corporation, the Port Authority Trans-Hudson Corporation, the Washington Metropolitan Area Transit Authority, the Southeastern Pennsylvania Transportation Authority, and the Greater Cleveland Regional Transit Authority:

Prohibit trains with inoperative automatic train control or cab signals from departing a terminal for main track operation. (R-76-42) (Class I, Urgent Followup)

Develop a procedure to discharge passengers and remove trains from service immediately if they develop automatic train control problems or cab signal problems while en route. (R-76-43) (Class II, Priority Followup)

(3)

Insure that communication facilities are adequate for dependable operational control and that proper procedures are in effect to provide emergency warnings and instructions. (R-76-44) (Class II, Priority Followup)

TODD, Chairman, McADAMS, HOGUE, BURGESS, and HALEY, Members, concurred in the above recommendations.

A handwritten signature in cursive script, appearing to read "Webster B. Todd, Jr.", is written in dark ink.

By: Webster B. Todd, Jr.
Chairman